



## **Modeling Quarterly Review Meeting**

April 22, 2015

CBPO Conference Room - The Fishshack  
410 Severn Avenue Annapolis, MD 21403

### **For Remote Access:**

**Adobe Connect:** <https://epa.connectsolutions.com/modeling/> (enter as guest)

**Conference Bridge:** (866)-299-3188 code 410-267-5731#

**Event webpage:** <http://www.chesapeakebay.net/calendar/event/21917>

**10:00 Announcements and Amendments to the Agenda – Dave Montali, WVDEP-  
Lee Currey, MDE**

**10:05 Review of Modeling Workgroup Priorities – Lee Currey, MDE - Dave  
Montali, WVDEP**

The quarterly review of the Modeling Workgroup priorities with associated timelines will be discussed.

**10:15 Phase 6 Watershed Model Schedule Update – Gary Shenk, EPA-CBP**  
Gary will present further updates of the development schedule with key links to the 2017 Midpoint Assessment schedule..

**10:25 Phase 6 Model Land Use – Peter Claggett, USGS**

Peter will present the Phase 6 Model land use classifications that will be used in the Phase 6 prototype model that will be developed between the April and July Quarterly Reviews.

**11:30 Phase 6 Land Use Target Loads – Olivia Devereux, Devereux Consulting**

Olivia will review the methods to calculate the land use loading rates. Agreement on the interim loading rates for the initial Phase 6 Watershed Model calibration will be requested from the Modeling Workgroup.

**12:30 LUNCH**

**1:30 Sensitivity to Nitrogen Inputs – Guido Yactayo, UMCES**

Guido will present recommendations for the response of nitrogen export to changes in input nutrient load derived from multiple watershed models. Agreement on the final nitrogen sensitivities will be requested from the Modeling Workgroup.

**2:00 Sensitivity to Phosphorus Inputs – Guido Yactayo, UMCES**

Guido will present initial recommendations for the response of phosphorus export to changes in input nutrient loads and storages derived from APLE phosphorus sensitivity analysis.

**2:30 Phase 6 Development Progress – Gopal Bhatt, Penn State**

Gopal will present progress on the latest version of the Phase 6 operational prototype. Progress includes a hydrology and sediment simulation with an updated 1985-2013 precipitation input dataset simulation of lag time using rSAS and UNEC, and incorporation of SPARROW land to stream (LTS) and stream to river (STR) factors.

**3:30 ADJOURN**



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**10:00 Announcements and Amendments to the Agenda – Lee Currey, MDE - Dave Montali, WVDEP**

**10:05 Chester River Shallow Water Multiple Models – Joseph. Zhang and Harry Wang, VIMS**

Joseph and Harry will describe the application of SCISM, an unstructured grid model, in the Chester River shallow water work. An interesting approach taken with SCISM is the vectored computing that's being used to allow 100 processes or more to handle the fine scale shallow water grid within a reasonable model run time.

**10:35 Full Representation of Diagenesis in WQSTM Sediments and Water Column – Carl Cerco, U.S. CoE ERDC**

A representation of all of the G1 (labile), G2 (refractory), and G3 (largely inert) organic fractions in the water column to match the same G series in the sediment will be presented. This is an important step forward in allowing improved WQSTM simulations of shore erosion and simulation of accelerated shoreline loss during climate change simulations as well as reservoir scour conditions.

**11:35 Refinements to the WQSTM Shallow Water Simulation – Carl Cerco, U.S. CoE ERDC**

Progress in developing an improved representation of shallow water in the Water Quality and Sediment Transport Model (WQSTM) will be presented.

**12:00 LUNCH**

**1:00 Sediment Loads from Shoreline Erosion – Larry Sanford and Jia Gao, UMCES**

Progress towards improved estimates of time-varying sediment loads from shoreline erosion will be described. Results show that wave power is the most significant factor for erosion in Chesapeake. Marsh shorelines present a nearly linear relationship between wave power and erosion rates but processes of erosion of bank shorelines are less clear. The results of this study are applicable at large

scales. In addition, a presentation on the research and monitoring in the Susquehanna Flats will be presented.

**1:40 Conowingo Infill Studies – Jeff Cornwell, UMCES**

An update on the two-year research and monitoring program will be provided. In the last quarter the long core program was completed and the first mobilization for a >100,000 cfs storm was done. In addition, a description of how the information provided by this research and monitoring program will be simulated by Phase 6 will be provided by Gary.

**2:00 Simulation of Ammonia Deposition – Lew Linker EPA-CBP**

CMAQ Model ammonia estimates for state emission-deposition were developed with the 2011 version of CMAQ. The ammonia deposition attribution to the States emissions is similar to the fate and transport of NOx emissions in the Chesapeake watershed. About 60 percent of ammonia emissions from the Chesapeake watershed are estimated to be redeposited in the watershed.

**2:40 Phase 6 Model Sediment Delivery Ratios – Peter Claggett, USGS and Reid Christianson, CWP**

Peter will discuss work relating stream sediment balances to measurable geomorphic quantities. Reid will cover estimation of urban stream sediment balances.

**3:00 ADJOURN**